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THE SPITZBERGEN EXCURSION OF THE INTERNATIONAL GEOLOGICAL CONGRESS

BY

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Among the many excursions undertaken by the International Geological Congress at the Stockholm meeting last summer, none were more pretentious or more successful than the excursion to Spitzbergen. Boldly planned, skillfully managed, and successfully carried out in practically all of its details, it was a memorable expedition. On this trip the party saw Sweden from Stockholm northward into Lapland; they cruised along a large part of the Norwegian coast; and they spent a week in Ice Fiord in Spitzbergen studying the complex geological structure, and the glacial phenomena. The expedition was planned by Professor Gerard DeGeer, who accompanied it as director and who gave freely to us all from his vast store of knowledge. To him, and to his accomplished wife, each member of the excursion came away feeling a debt of gratitude. It was a wonderful opportunity to see an interesting and far away region under the guidance of one who knows it so well; and to discuss the problems not only with him, but with other geologists and geographers of wide experience and knowledge. There were about seventy in the party, representing some fifteen nationalities, and including such well-known geologists as Credner, Penck, Wahnschaffe, Rothpletz, Keilhack, Saloman, Sapper, de Margerie, Madsen, and Reusch. English-speaking geologists were few in number, for there were but three from the British Isles—Cole, Lamplugh, and Strahan; one from Canada—Coleman; and four from the United States, these being, in addition to the writer, Miss Bascom of Bryn Mawr, and Miss Baker and Miss Rice of the University of Chicago.

It is difficult to select from among the multitude of observations with which each day was crowded, those which, because of their special noteworthiness, deserve mention in a brief note such as this. Surely all were impressed, in Sweden, by the clear evidence that from an ice center in that country the continental glacier spread westward, ascending the Norwegian divide, and, in its waning stages, holding up extensive marginal lakes which outflowed to the Atlantic across low passes in that divide. Impressive also was the record which Professor and Madame DeGeer have worked out, at Ragunda, of the time which has elapsed since the glacier receded from this part of Sweden. The diversion of the outlet of a large lake brought about its drainage; streams have dissected the lake and still earlier fiord sediments; and the annual layers there revealed have been painstakingly studied and counted, giving basis for an estimate in years of the time since the ice stood there. To many it was a surprise, and to all it was a matter of interest, to see the vast iron deposits at Kiruna in Lapland, and to observe in its Norwegian seaport, Narvik, the preparations for the shipment of this ore, which seems destined to play an important rôle in the iron industry of the world.

The quaint Laplanders, the beautiful fiord scenery of the Norwegian coast, the midnight sun, and the Arctic floe ice, were all new to most of the party and were a source of pleasure to all. But the great climax was Spitzbergen itself, where we had a week of busy days not bounded by sunrise or sunset, and some of them fully twenty hours long. Here we had the experience of gathering ferns and other Tertiary plant fossils from the moraines on glaciers; here we stood at the mouth of a coal mine, accumulated during a period of far more genial climate, and looked out over a waste of barren Arctic landscape and upon vast snow fields and glaciers from whose fronts icebergs were crashing into the sea. One could not wish for more convincing testimony of climatic change; it required only the slightest imagination to picture this desolate land the seat of luxuriant vegetation which is now forbidden it.

The geologic structure, in which rocks of almost every age from early Paleozoic to Quaternary are involved, and in various attitudes and relationships, with faults, folds, igneous intrusions, and unconformities, is revealed in almost diagrammatic simplicity in the steeply rising walls of the branching fiord, every branch of which we visited with frequent landings, and with convincing expositions from our leader. The topographic forms were a source of great interest to the physiographer for we found here a rock structure quite unlike that of well known regions of former glaciation. The processes and results of glacial erosion exhibited here were, therefore, new to most of us, and the phenomena were masked by the extensive gullying and talus deposit to which the steep slopes of horizontal or slightly inclined sedimentary strata had been subjected. There had developed a topography strikingly simulating that of an arid plateau region, like that of southwestern United States; the climate of Spitzbergen is, in fact, an arid climate. To me, of all the phenomena observed, those of the glaciers were of most interest, but I shall resist the temptation to dwell upon the many features of importance which they present. We are promised a full report on these glaciers by Professor DeGeer, who has studied and mapped them on his several expeditions.

Our little steamer left Ice Fiord under steam generated by Spitzbergen coal, and with it made its way to Norway. The islands are to-day a "No-Man's Land," but the presence there of extensive workable beds of coal in latitude 78° N. gives to this land, though far within the Arctic Zone, a new importance. Already, at the American coal mine, there is permanent settlement, and extensive development has been carried on. It was a wierd experience to find a "Longyear City" in this far northern land, to be conducted through a frozen coal mine by an American engineer, and to have a foreground of electric wires, and railway tracks with an ice cap background.

THE RUBBER WORKERS OF THE AMAZON

BY

A. LANGE.

In the State of Amazonas, excluding the City of Manaos, probably 150,000 men are directly occupied with the rubber trade. They are proprietors and workers. The proprietors, whether foreigners or Brazilians, have now adopted modern methods both in the working of the rubber and in its commercial manipulation. Not more than seven or eight years ago, the actual tapping of the rubber tree was conducted in such an unintelligent manner that enormous losses resulted through the killing of the trees. They are now tapped scientifically and the new method is enforced on all important rubber estates. Formerly the rubber was smoked with certain materials and in such a manner that the health of the operator was seriously affected after a few years' work. By the modern method no danger whatever is involved in the smoking process. Not only in the technical phases of rubber collecting but also on the business side of it they have improved their methods. They now, for example, employ expert bookkeepers, if not competent themselves in this line.

The proprietor living at a great distance from Manaos, often